



Dart Aerospace Ltd.  
1270 Aberdeen St  
Hawkesbury, ON  
K6A 1K7  
Canada

Tel (613) 632-5200  
Fax 613 632-5246

**D4037-3****Job Sheet 187312****Part No:** D4037-3**Job Qty:** 2 ea**Part Name:** Fwd Crossbeam**Part Weight:** 0 lbs**Status:** New**Priority:** Medium**Job Created:** 11/30/18**Job Tracking No:****Due Date:** 1/4/19**Created By:** Jesse White**Type:** SOLD**Description:**

**Note:** DWG REV E IPP REV:A NEW ISSUE 09-12-14 JLM VERIFIED BY:EC IPP REV:B AS PER REV B 10-04-19  
JLM VERIFIED BY:EC IPP REV:D AS PER ECN 11-554 11-05-24 JLM VERIFIED BY:DD IPP REV C:AS PER  
ECN 10-563 10-09-28 JLM VERIFIED BY:DD

**Ship Via:****Bill of Materials****Job Routing**

| Op No | Operation              | Qty   | Start Date | Due Date | Standard  |         | Workcenter/Supplier   |           | Sign-off         |
|-------|------------------------|-------|------------|----------|-----------|---------|-----------------------|-----------|------------------|
|       |                        |       |            |          | Setup Hrs | Run Hrs | Workcenter / Supplier | Lead Time |                  |
| 100   | Waterjet - Flow - 1    | 2 pcs | 1/4/19     | 1/4/19   | 0.00      | 2.11    | Waterjet - Flow       |           | OK 18/12/30      |
| 110   | CNC Vertical Machining | 2 pcs | 1/4/19     | 1/4/19   | 2.85      | 5.71    | HAAS1-4               |           | OK 19-01-14      |
| 120   | QC                     | 2 pcs | 1/4/19     | 1/4/19   | 0.00      | 0.00    | QC2 Machining-2       |           | OK 19-01-14      |
| 130   | QC                     | 2 pcs | 1/4/19     | 1/4/19   | 0.00      | 0.00    | QC8 Machining-2       |           | OK 19/01/15      |
| 140   | HandFinish             | 2 pcs | 1/4/19     | 1/4/19   | 0.00      | 0.42    | HandFinish1           |           | OK 19/01/15      |
| 150   | Powdercoat             | 2 pcs | 1/4/19     | 1/4/19   | 0.00      | 0.43    | Powdercoat1           |           | OK 19-01-15      |
| 160   | QC                     | 2 pcs | 1/4/19     | 1/4/19   | 0.00      | 0.00    | QC3                   |           | JAN 16 2019 68   |
| 170   | Packaging              | 2 pcs | 1/4/19     | 1/4/19   | 0.00      | 0.00    | Packaging3-2          | 5471      | JAN 15 2019 9-89 |
| 180   | QC21-SA                | 2 Ea  | 1/4/19     | 1/4/19   | 0.00      | 0.00    | QC21                  |           | JAN 17 2019      |

Part Op 100 - Cut blank as per file D4037-3\_BLANK

Descriptions: 110 - MACHINE AS PER FOLI FA878 AND DWG

IN 138997 START: 12:50 O.T. 320° FINISH: 1:20

**Job BOM**

| Part / Item          | Component Name           | Quantity           | Operation               | Container |
|----------------------|--------------------------|--------------------|-------------------------|-----------|
| M6061T6B1.000X16.000 | 6061-T6 Bar 1.00 X 16.00 | 7.8000 ft (3.9 ea) | 100-Waterjet - Flow - 1 | S136486   |

**Job Allocations**

| Operation               | Component Part       | Required | Inventory | Allocated |
|-------------------------|----------------------|----------|-----------|-----------|
| 100-Waterjet - Flow - 1 | M6061T6B1.000X16.000 | 8        | 0         | 0         |

**Container No:** S140895**Part:** D4037-3**Job No:** 187312**Serial No/Batch:** S140895**Revision:****Inspector:****Exp Date:****Instructions:** Various STC's

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**Part Specifications**

Specifications could not be found.

Plex 11/30/18 9:24 AM dart.white.jesse

Date: 12/30/18



Entered: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. \_\_\_\_\_

Route update only ☐

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| Job: _____<br><br>Part No. _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/> | <b>DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/><br/>           Machining <input type="checkbox"/><br/>           Large Fab <input type="checkbox"/> </div> <div>           Cross tube <input type="checkbox"/><br/>           Small Fab <input type="checkbox"/><br/>           Finishing <input type="checkbox"/> </div> <div>           Eng. (Non-AW) <input type="checkbox"/><br/>           Prod. Eng. Coord. <input type="checkbox"/><br/>           Rec/Store/Packaging <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/><br/>           Water Jet <input type="checkbox"/><br/>           Supplier <input type="checkbox"/><br/>           Quality <input type="checkbox"/> </div> </div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                     |  |
| Date : _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Sequence #: _____                                                                                                                 | QTY Affected : _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  | MRB (QSI042)        |  |
| <b>Description Work Order Deviation</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                   | <b>Disposition</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  | <b>Completed By</b> |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |                     |  |
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| <b>Root Cause</b><br><br><div style="display: flex; justify-content: space-between;"> <div>           Operator <input type="checkbox"/><br/>           Manufacturing Process <input type="checkbox"/><br/>           Equip/Tooling <input type="checkbox"/><br/>           Handling/Presservation <input type="checkbox"/><br/>           Material <input type="checkbox"/><br/>           Product Improvement <input type="checkbox"/><br/>           Process Improvement <input type="checkbox"/><br/>           Human Factors <input type="checkbox"/> </div> <div>           Pressure/Forced <input type="checkbox"/><br/>           Bending <input type="checkbox"/><br/>           Crushing <input type="checkbox"/><br/>           Cracks <input type="checkbox"/><br/>           Crimp/Kink/Ripple/Wave/Twist <input type="checkbox"/><br/>           Marks/Chatter <input type="checkbox"/><br/>           Mislabeled <input type="checkbox"/> </div> <div>           Contamination <input type="checkbox"/><br/>           Misaligned/off center <input type="checkbox"/><br/>           BOM/Route <input type="checkbox"/><br/>           Broken/Damage/Defect <input type="checkbox"/><br/>           Incomplete/Unclear Instructions <input type="checkbox"/><br/>           Drill Holes <input type="checkbox"/><br/>           Fit/Function <input type="checkbox"/> </div> <div>           Power Loss/Surge <input type="checkbox"/><br/>           Folio/Program <input type="checkbox"/><br/>           Grain Direction <input type="checkbox"/><br/>           Weld <input type="checkbox"/><br/>           Wrong Stock Pulled <input type="checkbox"/><br/>           Out of Sequence <input type="checkbox"/><br/>           Off-set/Set-up <input type="checkbox"/> </div> <div>           Positioned Wrong <input type="checkbox"/><br/>           Outside Tolerance <input type="checkbox"/><br/>           Drawing <input type="checkbox"/><br/>           Finish <input type="checkbox"/><br/>           Part Lost/Missing <input type="checkbox"/><br/>           Misread <input type="checkbox"/> </div> </div> |                                                                                                                                   | <b>FAULT CATEGORY</b><br><br><div style="display: flex; justify-content: space-between;"> <div>           Operator <input type="checkbox"/><br/>           Manufacturing Process <input type="checkbox"/><br/>           Equip/Tooling <input type="checkbox"/><br/>           Handling/Presservation <input type="checkbox"/><br/>           Material <input type="checkbox"/><br/>           Product Improvement <input type="checkbox"/><br/>           Process Improvement <input type="checkbox"/><br/>           Human Factors <input type="checkbox"/> </div> <div>           Pressure/Forced <input type="checkbox"/><br/>           Bending <input type="checkbox"/><br/>           Crushing <input type="checkbox"/><br/>           Cracks <input type="checkbox"/><br/>           Crimp/Kink/Ripple/Wave/Twist <input type="checkbox"/><br/>           Marks/Chatter <input type="checkbox"/><br/>           Mislabeled <input type="checkbox"/> </div> <div>           Contamination <input type="checkbox"/><br/>           Misaligned/off center <input type="checkbox"/><br/>           BOM/Route <input type="checkbox"/><br/>           Broken/Damage/Defect <input type="checkbox"/><br/>           Incomplete/Unclear Instructions <input type="checkbox"/><br/>           Drill Holes <input type="checkbox"/><br/>           Fit/Function <input type="checkbox"/> </div> <div>           Power Loss/Surge <input type="checkbox"/><br/>           Folio/Program <input type="checkbox"/><br/>           Grain Direction <input type="checkbox"/><br/>           Weld <input type="checkbox"/><br/>           Wrong Stock Pulled <input type="checkbox"/><br/>           Out of Sequence <input type="checkbox"/><br/>           Off-set/Set-up <input type="checkbox"/> </div> <div>           Positioned Wrong <input type="checkbox"/><br/>           Outside Tolerance <input type="checkbox"/><br/>           Drawing <input type="checkbox"/><br/>           Finish <input type="checkbox"/><br/>           Part Lost/Missing <input type="checkbox"/><br/>           Misread <input type="checkbox"/> </div> </div> |  |                     |  |
| Other/Details:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |                     |  |



|                                     |                     |                    |
|-------------------------------------|---------------------|--------------------|
| <b>DART AEROSPACE LTD</b>           | <b>Work Order:</b>  | 187317             |
| <b>Description: Fwd Crossbeam</b>   | <b>Part Number:</b> | D4037-3            |
| <b>Inspection Dwg: D4037 Rev: E</b> |                     | <b>Page 1 of 2</b> |

### FIRST ARTICLE INSPECTION CHECKLIST

| Drawing Dimension | Tolerance          | Actual Dimension | Accept | Reject | Method of Inspection | Comments     |
|-------------------|--------------------|------------------|--------|--------|----------------------|--------------|
| 41.66             | +/-0.030           | 41.653           | ✓      |        |                      |              |
| 0.92              | +/-0.030           | 0.919            | ✓      |        | Vern                 | GA-13        |
| 1.75              | +/-0.030           | 1.750            | ✓      |        | "                    | "            |
| 0.92              | +/-0.030           | 0.920            | ✓      |        | "                    | "            |
| 2.125             | +/-0.010           | 2.125            | ✓      |        | "                    | "            |
| Ø0.316            | +0.006/-0.001      | Ø0.317           | ✓      |        | "                    | "            |
| Ø0.391            | +0.006/-0.001      | Ø0.392           | ✓      |        | "                    | "            |
| 0.28              | +/-0.030           | 0.280            | ✓      |        | "                    | "            |
| R0.19             | +/-0.030           | R0.188           | ✓      |        | "                    | "            |
| 0.63              | +/-0.030           | 0.625            | ✓      |        | "                    | "            |
| 1.50              | +/-0.030           | 1.4995           | ✓      |        | "                    | "            |
| 1.20              | +/-0.030           | 1.215            | ✓      |        | "                    | "            |
| 1.95              | +/-0.030           | 1.980            | ✓      |        | "                    | "            |
| 6.00              | +/-0.030           | 6.000            | ✓      |        | H-G                  | 31006        |
| 10.54             | +/-0.030           | 10.535           | ✓      |        | "                    | "            |
| 1.38              | +/-0.030           | 1.375            | ✓      |        | Vern                 | GA-13        |
| 1.75              | +/-0.030           | 1.749            | ✓      |        | "                    | "            |
| 7.79              | +/-0.030           | 7.787            | ✓      |        | H-G                  | 31006        |
| 5.80              | +/-0.030           | 5.800            | ✓      |        | "                    | "            |
| 2.250             | +/-0.010           | 2.250            | ✓      |        | Vern                 | GA-13        |
| 0.875             | +/-0.010           | 0.877            | ✓      |        | "                    | "            |
| 6.000             | +/-0.010           | 6.000            | ✓      |        | "                    | "            |
| 7.75              | +/-0.030           | 7.750            | ✓      |        | "                    | "            |
| 1.125             | +/-0.010           | 1.125            | ✓      |        | "                    | "            |
| 9.29              | +/-0.030           | 9.286            | ✓      |        | Vern                 | CNG02        |
| 5.17              | +/-0.030           | 5.170            | ✓      |        | H-G                  | 31006        |
| 10.79             | +/-0.030           | 10.787           | ✓      |        | "                    | "            |
| 0.91              | +/-0.030           | 0.917            | ✓      |        | Vern                 | GA-13        |
| 0.09 x 45°        | +/-0.030 x +/-0.5° | 0.112 x 45°      | ✓      |        | "                    | "            |
| 0.31              | +/-0.030           | 0.327            | ✓      |        | "                    | "            |
| 0.25              | +/-0.030           | 0.248            | ✓      |        | "                    | "            |
| 0.530             | +/-0.010           | 0.522            | ✓      |        | G-P/Mic              | ref. / GA-03 |
| 0.25              | +/-0.030           | 0.252            | ✓      |        | Mic                  | 118-120      |
| 0.550             | +/-0.010           | 0.552            | ✓      |        | T-G/Mic              | ref. / GA-02 |
| 3.00              | +/-0.030           | 3.000            | ✓      |        | Vern                 | GA-13        |
| 2.00              | +/-0.030           | 2.004            | ✓      |        | T-G/Mic              | ref. / GA-02 |
| 1.00              | +/-0.030           | 1.032            | ✓      |        | Vern                 | GA-13        |

|                                            |  |                             |
|--------------------------------------------|--|-----------------------------|
| <b>DART AEROSPACE LTD</b>                  |  | <b>Work Order:</b> 187312   |
| <b>Description:</b> Fwd Crossbeam          |  | <b>Part Number:</b> D4037-3 |
| <b>Inspection Dwg:</b> D4037 <b>Rev:</b> E |  | <b>Page 2 of 2</b>          |

### FIRST ARTICLE INSPECTION CHECKLIST

| Drawing Dimension | Tolerance | Actual Dimension | Accept | Reject | Method of Inspection | Comments |
|-------------------|-----------|------------------|--------|--------|----------------------|----------|
| R0.32             | +/-0.030  | R0.032           | ✓      |        | Rad.g                | ref.     |
| 0.200             | +/-0.010  | 0.200            | ✓      |        | Vern                 | GA-13    |
| 0.64              | +/-0.030  | 0.670            | ✓      |        | "                    | "        |
| 0.45              | +/-0.030  | 0.466            | ✓      |        | "                    | "        |
| 0.70              | +/-0.030  | 0.730            | ✓      |        | "                    | "        |
| 0.25              | +/-0.030  | 0.252            | ✓      |        | Mic                  | 118-120  |
| R0.13             | +/-0.030  | R0.125           | ✓      |        | R-6                  | ref.     |
| 0.49              | +/-0.030  | 0.480            | ✓      |        | Vern                 | GA-13    |
| 0.06              | +/-0.030  | 0.066            | ✓      |        | "                    | "        |
|                   |           |                  |        |        |                      |          |
|                   |           |                  |        |        |                      |          |
|                   |           |                  |        |        |                      |          |
|                   |           |                  |        |        |                      |          |

|                          |                                |                              |
|--------------------------|--------------------------------|------------------------------|
| <b>Measured by:</b> J.A. | <b>Audited by:</b> [Signature] | <b>Preliminary Approval:</b> |
| <b>Date:</b> 19-01-14    | <b>Date:</b> 19/01/15          | <b>Date:</b>                 |

| Rev | Date     | Change                           | Revised by | Approved    |
|-----|----------|----------------------------------|------------|-------------|
| A   | 10.06.08 | New Issue                        | KJ         |             |
| B   | 10.10.07 | Dimensions updated per Dwg Rev C | KJ         |             |
| C   | 11.06.21 | Dwg Rev updated                  | KJ         |             |
| D   | 17.02.16 | Dimensions updated per Dwg Rev E | KJ         | [Signature] |